V. S. L. PATE

ENTOMOLOGICAL NEWS

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ENTOMOLOGICAL NEWS

VOL. LI MARCH, 1940 No. 3

Dragonfly Collecting in Eastern Massachusetts: 1939. (Odonata).

By EDWARD M. DAVIS, Baker Museum, Rollins College, Winter Park, Florida.

A state which has seen as much collecting as Massachusetts would seem a poor place in which to find dragonflies of any interest, but the results of the casual, haphazard collecting, which was the best I could do under the circumstances add emphasis to the fact that the collecting of any group will ordinarily furnish much worth-while material.

May 19th, Shirley. *Williamsonia lintneri.* Following some very cold weather the 18th of May was warmer and the 19th was very warm. In the middle of the afternoon I was walking through a field when a very young dragonfly fluttered by, fully a quarter of a mile from water and going directly towards a wooded slope. Although I had no net its flight was so feeble that I caught it in my hands when it came to rest on the trunk of a small tree. It was far too weak in flight to have captured any food previously, but lived four days in a paper bag without being fed, giving a good idea of a dragonfly's ability to survive if the weather should become unfavorable soon after emergence. This specimen was a male and at the time it was caught was completely black except for the pale brown labrum, brown eyes, and dark coppery lustre of the thorax and frons; in the field it appeared completely black.

May 29. Shirley. *Enallagma boreale.* First seen on this day at a small semi-stagnant pond about 150 feet long and 50 feet wide, surrounded by woods. By June 5th it was so numerous that the high bush blueberry bushes at the edge actually seemed to have a premature crop of ripe fruit. Never have I seen anywhere damselflies so numerous. As many as twelve were counted on a single spatter dock leaf and an experimental sweep of the net past the bushes captured sixteen.

June 5. Shirley. At the small pond mentioned above a male *Nasiaeschna pentacantha* was caught lazily cruising over the water. On June 12th another male was caught and still another was seen at the same place. It took patient and careful stalking in the water to capture these, for in spite of the slow, direct flight, their apparent knowledge of the length of my net handle was uncanny, and they constantly approached only to turn away at the last safe moment. Field identification of these is not difficult at this time of year, for the only other large dragonfly which I have ever seen around at this time is *Anax junius* which differs noticeably in color, shape, and habits. I was amused to see on one occasion an *Enallagma boreale* alight momentarily upon the abdomen of the cruising *Nasiaeschna.*

While wading in this pond on June 13th two *Leucorrhinias* passed me in tandem and I noticed that they were of different species. Fortunately I caught them and found one to be *L. intacta* and the other *L. proxima,* but what surprised me most was to find that both were males!

June 2 and 5. Shirley. *Tetragoneuria cynosura* and var. *simulans.* The former is normally common at this time of year in certain protected sunny places well away from water. I have always found them there and this year they were abundant, so that on one occasion I was able to catch them at the rate of almost one a minute for fifty minutes. Var. *simulans* mixed with the others but there were fewer of them; of those captured there was approximately one *simulans* to every five *cynosura,* though the true proportion was undoubtedly nearer one to eight or ten, since I was making a special effort to catch *simulans.* At this time there were many more females than males of both varieties in the flocks.

There were a few *Somatochlora kennedyi* mixed with the *Tetragoneurias,* and all but one that were caught were females. These are not at all common locally, but were easlly spotted in flight by the long, almost parallel-sided abdomen, greater overall length, and by their direct habit of flight. It was possible after seeing one to follow it about with a good chance

of catching it, whereas following any single *Tetragoneuria* in a flock is ordinarily impossible because of their erratic flight.

Dorocordulia libera is a common dragonfly and a few usually were to be found in these flocks. The "Indian club" shape of the abdomen made field identification easy. When alive, the green-gold opalescence of the compound eyes of this species as well as those of *Cordulia shurtleffi* is of rare beauty. They reflect so much light that under certain conditions the entire thorax seems to be so colored.

June 11. Shirley. In the alder covered section of a shallow brook I found a female *Cordulegaster maculatus* ovipositing at the edge. The peculiar up and down plunging motion of the abdomen under these circumstances is hard to describe but very characteristic. She was laying actively as I approached, thrusting her abdomen into water about twice a second and she continued for 99 more times before stopping, and all this within an area of not more than four square inches.

One *Ophiogomphus aspersus* was caught at the same brook, but I have never found one of this genus where there are alders; only where the sides are grassy and open, when they will be found on the grass or more frequently upon stones jutting from the water. Several others, presumably this species, were seen; their habits and the noticeably green thorax distinguishing them from anything else, except some other species of the same genus.

Gomphus brevis was also collected on this day as well as subsequently in various other places. Its habits are similar to those of *O. aspersus* but its color is predominantly black. It also can be found along streams where the banks are wooded, where I have never yet found any *Ophiogomphines*.

June 15. Lancaster. *Enallagma minusculum* and *laterale* both found at a rather large pond. They look much alike in the field, but a person with good eyesight can easily separate them by the narrow but distinct black mark against the blue of the side of the 8th abdominal segment in *E. laterale*, there being no mark on *E. minusculum*. Also at this pond was *E. traviatum* and several of the commoner species of Zygoptera,

while for some reason Anisoptera were almost entirely absent.

At a very small pond, not more than 100 yards from the one just mentioned, the only species of *Enallagma* occurring is *E. aspersum*, and it is not found at the large pond. There is a ridge about 30 feet high separating these ponds and evidently making an effective barrier. The small pond was swarming with Anisoptera, *Leucorrhinias* being so numerous that I was frequently catching them accidentally when swinging my net at other species.

July 1. Shirley. *Lanthus albistylus* has taken possession of the rocks in the brook where formerly *O. aspersus* and *G. brevis* held sway. They are active when flying and difficult to catch when on the wing; eight were caught mostly because of a fatal habit of returning to the rock from which they had first been frightened. Their green eyes, black and light green thorax, and very small size were distinctive, and it was usually possible to get near enough to see the white superior appendages. This species was caught in several localities over a period of a month but not a single female was found.

July 9 and 10. Ashby. Here my son and I found a lot of *Ophiogomphines* all within a distance of 150 yards along a small brook. As soon as the alders encroached these rare dragonflies disappeared. Of the twenty or more caught on two days, one was *O. asperus*, and the remainder are still a matter of discussion. They seem to be closest to *O. maineusis*. The brook was held by the males, and I believe from what little I was able to observe that the females were probably high in the neighboring trees. We caught two copulating pairs and one female just about to oviposit. She had a cluster of several hundred eggs ready to deposit; the largest cluster I have ever seen on a female dragonfly. Under my hand lens they were very light brown and spherical, and it was with pleasurable anticipation that I dipped her abdomen in the water and watched the stocking of the brook for my future collecting! These unidentified *Ophiogomphines* look exactly like *O. aspersus* in the field. A close comparison of the markings shows some small differences, while even without a hand lens the difference in the appendages can be seen.

An Unpublished Letter of Dr. Thaddeus William Harris.

[Dr. Dorothy Spring, of the Laboratory of Dermatological Research, School of Medicine, University of Pennsylvania, has shown me a letter, belonging to her mother, Mrs. Mary Dorr Spring, written by the famous entomologist, Dr. Thaddeus William Harris, to Miss Elizabeth Dorr, a grandaunt of Mrs. Spring.

Dr. Harris wrote in reply to questions from Miss Dorr, a teacher, who was born in Dorchester, Massachusetts, in 1804. She taught at academies in Windsor, Vermont, and New Bedford, Massachusetts, and was at the head of an academy in Dorchester. She painted, made collections of shells, insects and flowers, wrote essays and kept voluminous diaries. She did much of her collecting on the Island of Naushon. In 1836 she painted some "illustrations of the structure of the skin" for a Dr. Bartlett of New Bedford. He gave lectures on anatomy and she attended them. On January 7, 1837, she "passed the day with Catherine Harris in the nursery with her seven children, Thaddeus, aged 11y., Harriet Gardner, Emma Forbes, Charles and Catherine (twins), Amos Holbrook and Clarendon, about nine months old. It was a very pleasant day not soon to be forgotten." This list of Mrs. Harris's children naturally does not include Edward Doubleday Harris, also known as an entomologist, who was born September 20, 1839, and died March 2, 1919.

Since this letter gives a picture of the state of entomological literature in the United States more than a century ago, it seems to be worth printing, with Mrs. Spring's gracious permission to do so.—Editor.]

Miss Elizabeth Dorr, New Bedford, Mass.

Cambridge (Mass.) Jany. 23, 1833.

It gives me much pleasure to reply to the enquiries of my friend Miss Dorr, although my answer may not exactly meet her expectations. It is a fact that there is no work on Entomology fully applicable to the wants of the rising generation in this Country. We have no comprehensive Manual of the Science illustrated by reference to or descriptions of American

Insects. A London professor has, however, prepared a popular work, in 3 volumes 18 mo, forming a part of the 'Library of Entertaining Knowledge', & entitled 'Insect Architecture, Insect Tranformations, & Insect Miscellanies', which are highly entertaining & instructive, and of undoubted authority; for the editor & compiler is himself a practical naturalist, & has added much original matter, the result of his personal observations. This work has been republished in this country, & the volumes on Insects may be procured separately. Prof. Rennie has also prepared a very small 'Alphabet of Insects', treating briefly of the structure, senses, & growth of Insects, which is also to be purchased though not republished here. I cannot speak in terms of unqualified praise of this Alphabet, or of the cavilling spirit in which much of it is written; it is also defective in containing no explanation of the system of classification now almost universally adopted. In default of a better book it will enable the learner to understand the external and internal anatomy of insects.—By far the best general work on insects is one written jointly by the Rev. Wm. Kirby & Wm. Spence, Esq., & entitled 'An Introduction to Entomology', in 4 vols. 8vo, printed at London. Next to this valuable & rather expensive work is the 'Animal Kingdom' by Cuvier, the part on Insects by Latreille. It has been translated & printed in 4 vols., 8vo., in Philadelphia, & the translator, Dr. McMurtrie, has lately published an abridgment of it in 1 vol., 8vo., which forms a very useful manual on the Natural History & Systematic Arrangement of Animals. By the use of this Abridgment of the Animal Kingdom I believe you will be able to classify & refer to their proper genera most of our common insects. For their *specific* names you would have to consult a large number of books, many of which are not to be obtained without a good deal of difficulty & expense: but if you are particularly curious on that point, I can probably assist you, & shall be happy so to do, at any time when you may think proper to command the services of,

very sincerely

your friend & servt.

T. Wm. Harris."

A List of Maryland Odonata.

By ELIZABETH G. FISHER,
Academy of Natural Sciences, Philadelphia.

(Continued from page 42.)

39. L. FLAVIDA Rambur. Maxwell Pt., Baltimore Co., July 8, 1 ♂, 1 ♀; tenerals; Swan Creek, Anne Arundel Co., June 19, 2 ♂, 2 ♀; Lakeshore, Anne Arundel Co., June 19, Aug. 4, 2 ♂, 3 ♀. [See Uhler 1857, Hagen 1861, 1875, Banks 1892, Ris 1910.]

This species is common on the costal plain but apparently rare above the Fall Line, being commonly associated with *L. auripennis*.

40. L. SEMIFASCIATA Burmeister. Govans, Baltimore City, July 10, 1 ♂; "Crimea", Baltimore City, June 4, 1 ♀; Swan Creek, Anne Arundel Co., June 19, 1 ♂; Lakeshore, Anne Arundel Co., June 19, 1 ♀. [See Hagen 1861, 1875, Banks 1892, Ris 1910.]

Eggs were obtained from females on June 19. This species is also predominately a coastal plain species.

41. L. PULCHELLA Drury. Very common about almost all ponds and streams as well as brackish water, June-August. [See Uhler 1857, Hagen 1861, 1874, 1875, Ris 1903, 1910, Calvert 1903.]

42. L. VIBRANS VIBRANS Fabricius. Mt. Washington, Baltimore City, July 11-12, 2 ♂; Roland Park, Baltimore City, June 18, 1 ♂; South River, Anne Arundel Co., July 1, 1 ♂ [See Calvert 1903.]

Not common, in localized areas.

43. PLATHEMIS LYDIA (Drury). Very common about standing water or resting in sunny spots, May 27-September. [See Uhler 1857, Hagen 1861, 1875, Ris 1903, Calvert 1903, Ris 1910.]

I have seen this species in copulation as early as May 30. Their "white tails" were also prominent at this date.

44. CANNACRIA GRAVIDA (Calvert). [See Calvert 1907.].

45. SYMPETRUM OBTRUSUM (Hagen). Cromwell Bridge, Lock Raven, Baltimore Co., Sept. 20, 1 ♂.

46. S. RUBICUNDULUM RUBICUNDULUM (Say). Rockland, Baltimore Co., July 6, 1 ♂, 1 ♀ tenerals; Owing Mills, Balti-

more Co., July 8, 1 ♂. [See Hagen 1861, 1875, 1890, Calvert 1893.]

47. S. RUBICUNDULUM ASSIMILATUM (Uhler). [See Hagen 1861, 1875, Banks 1892, Ris 1911.]

48. S. SEMICINCTUM (Say). Cromwell Bridge, Lock Raven, Baltimore Co., Sept. 20, 1 ♂; Lutherville, Baltimore Co., Aug. 11, 1 ♀; Linthecium, Anne Arundel Co., July 5, 1 ♂. [See Hagen 1861, Banks 1892, Calvert 1893.]

49. S. VICINUM (Hagen). "The Caves", Baltimore Co., Sept. 26, 1 ♀; Rockland, Baltimore Co., Oct. 11, 3 ♂, 2 ♀. Lakeshore, Anne Arundel Co., Aug. 4, 1 ♂, 1 ♀. [See Hagen 1861, Banks 1892, Ris 1903, 1911.]

Mating on October 11 at Rockland.

50. PACHYDIPLAX LONGIPENNIS (Burmeister). Very common about most ponds and over brackish water, May 30-Aug. 24. [See Hagen 1861, Ris 1903, 1911.]

51. ERYTHEMIS SIMPLICICOLLIS (Say). Very common about most ponds and brackish water, May-Aug. 24. [See Say 1839, Hagan 1861, 1875, Banks 1892, Ris 1903.]

52. PANTALA HYMENAEA (Say). "Soldier's Delight", Baltimore Co., July 8, 1 ♂.

53. P. FLAVESCENS (Fabricius). "Soldier's Delight", Baltimore Co., July 18, 1 ♂. [See Hagen 1861, 1874, 1875, Calvert 1893, Ris 1903, 1913.]

54. TRAPISTIGMA LACERATA Hagen. Often seen about ponds but rarely taken as they fly rapidly and far from shore. [See Hagen 1861, 1875, Calvert 1893, Banks 1892.]

This species was mating on May 30 at Frederick.

Family AGRIONIDAE.

Agrioninae.

55. AGRION MACULATUM Beauvais. Very common about practically all streams, June-October. [See Hagen 1861, 1875, Root 1923.]

56. HETAERINA AMERICANA Fabricius. "Soldier's Delight", Baltimore Co., Sept. 11-25, 5 ♂, 3 ♀; Long Green Run, Hartley, Baltimore Co., July 17, 1 ♂; Dead Run, Colonial Park, Baltimore Co., June 4-July 9, 7 ♂, 1 ♀. [See Hagen 1861, 1875, Banks 1892, Calvert 1893, Root 1923.]

A localized species.

Family COENAGRIONIDAE.

Lestinae.

57. LESTES INEQUALIS Walsh. Rockland, Baltimore Co., July 15, 2♂, 1♀.

58. L. FORCIPATUS Rambur. Mt. Washington, Baltimore City, July 8, 1♂; Swan Creek, Anne Arundel Co., 1♀; Lakeshore, Anne Arundel Co., Sept. 22, 2♂, 1♀. [See Root 1923.]

59. L. DISJUNCTUS Selys. [See Ris 1903.]

60. L. RECTANGULARIS Say. Rockland, Baltimore Co., July 6-15, common; Lake Roland, Baltimore Co., July 13, 1♂; Frederick, Frederick Co., May 30, 4♂; Swan Creek, Anne Arundel Co., June 19, 2♂, 4♀. [See Hagen 1861, Banks 1892, Ris 1903, Root 1923.]

Tenerals were found on July 15.

61. L. VIGILAX Hagen. Lakeshore, Anne Arundel Co., Aug. 4, 1♂. [See Root 1923.]

62. L. UNCATUS Kirby. Govans, Baltimore City, April 24, 4♂, 3♀.

This species was in copulation at this early date. It was the first species on the wing at this pond.

Coenagrioninae.

63. ARGIA APICALIS (Say). Very common about Lake Roland, Lock Raven, and Potapsco River at Avolon, May-August. Conewingo, Baltimore Co., Aug. 7, 6♀; Union Dam at Oella, Baltimore Co., July 23, 1♂, 1♀; "Soldier's Delight", Delight, Baltimore Co., July 4, 1♀; Octoraro Creek, Cecil Co., June 17, 1♂. [See Root 1923.]

This species was abundant flying in a heavy rain at Union Dam. Tenerals were still numerous on June 17.

64. A. BIPUNCTULATA (Hagen). Lakeshore, Anne Arundel Co., June 19-Aug. 4, very common. [See Root 1923.]

65. A. MOESTA PUTRIDA (Hagen). "Soldier's Delight", Delight, Baltimore Co., June 18, 5♂, 2♀, July 4, 3♂, 2♀; Dead Run, Colonial Park, Baltimore Co., June 4, 1♂; July 18, 3♂; Mt. Washington, Baltimore Co., June 8, 4♂. [See Hagen 1861, Banks 1892.]

66. A. SEDULA (Hagen). [See Root 1923.]

67. A. TIBIALIS (Rambur). Pretty Boy, Baltimore Co., June 23, 1♀.

68. A. TRANSLATA Hagen. Lock Raven, Baltimore Co., July 2, very common; Ashland, Baltimore Co., June 30, 1 ♂ teneral; Lake Roland, Baltimore Co., June 25, 1 ♀. [See Root 1923.]

In copulation and ovipositing on July 2.

69. A. VIOLACEA (Hagen). This species is common about ponds, streams, and brackish water, May 30-Aug. 11. [See Hagen 1861, Banks 1892, Ris 1903, Calvert 1903.]

This species is our commonest *Argia*. In copulation June 8.

70. AMPHIAGRION SAUCIUM (Burmeister). Piney Creek, Baltimore Co., June 6, 2 ♂, 5 ♀; Pretty Boy, Baltimore Co., June 24, 1 ♂; Lutherville, Baltimore Co., June 29, 1 ♂; Back River, Baltimore Co., July 15, 1 ♂; Ridgeville, Frederick Co., May 30, common; Frederick, Frederick Co., May 30, 1 ♂; Govans, Baltimore City, June 11, common; Glenburnie, Anne Arundel Co., June 19, 1 ♂, 2 ♀; Waterford Mill, Old Annapolis Road, Anne Arundel Co., June 10, 1 ♂. [See Hagen 1861, Selys 1876, Banks 1892, Root 1923.]

At Ridgeville on May 30, I found large numbers in a marshy field where they were mating and in tandem among the sedges.

71. NEHALENNIA GRACILIS Morse. Swan Creek, Anne Arundel Co., June 19, 4 ♂, 2 ♀; Lakeshore, Anne Arundel Co., June 19-Aug. 4, common. [See Root 1923.]

72. N. IRENE (Hagen). Rockland, Baltimore Co., June 15, 1 ♂, 2 ♀.

73. CHROMAGRION CONDITUM (Hagen). "Soldier's Delight", Delight, Baltimore Co., July 8, 1 ♂; Mt. Washington, Baltimore City, June 11, 3 ♂; Gray's Swamp, Calvert Co., May 27, 1 ♂. [See Selys 1876, Calvert 1893.]

The last locality cited is a cypress swamp in the southern part of the state.

74. TELEALLAGMA DAECKII (Calvert). [See Root 1923.]

75. ENALLAGMA HAGENI (Walsh). [See Selys 1876, Banks 1892, Root 1923.]

76. E. DURUM (Hagen). Bush River, Harford Co., June 3, 5 ♂, 2 ♀; Swan Creek, Anne Arundel Co., June 19, 1 ♂; Governor's Run, Calvert Co., July 7, 2 ♀; East Neck Island, Kent Co., June-August, very common. [See Hagen 1861, Selys 1876, Calvert 1893, 1903, Ris 1903, Banks 1892, Root 1923.]

This is our commonest species about brackish water. Mating pairs were seen on June 3.

77. E. GEMINATUM Kellicott. [See Root 1923.]

78. E. SIGNATUM (Hagen). Bush River, Harford Co., June 3, 2 ♂, 6 ♀, (many seen); Lake Roland, Baltimore Co., June 17, 1 ♂, 1 ♀; Dead Run, Colonial Park, Baltimore Co., June 4, 2 ♀; South River, Anne Arundel Co., July 1, 2 ♂, (many seen). [See Selys 1876, Banks 1892, Calvert 1893, Root 1923.]

Many were seen mating at the Bush River locality on June 3rd; they appeared to be concentrated in the reeds close to the water in company with *Enallagma durum*.

79. E. VESPERUM Calvert. [See Root 1923.]

80. E. EBRIUM (Hagen). Lake Roland, Baltimore Co., May 25, 1 ♂. [Muttkowski 1910.]

81. E. EXSULANS (Hagen). Lock Raven, Baltimore Co., June-July, common; Lake Roland, Baltimore Co., June-July, common; "Soldier's Delight", Delight, Baltimore Co., July 4, 1 ♀; Cockeys Mill Rd., Baltimore and Howard Cos. July 10, 1 ♂; Dead Run, Colonial Park, Baltimore Co., June 4-July 18, common; Potapsco River at Avolon, Baltimore and Howard Cos. July 9, common. [See Selys 1876, Banks 1892, Root 1923.]

This species was seen mating on both June 4th and 24th.

82. E. PALLIDUM Root. [See Root 1923.]

83. E. CIVILE (Hagen). Frederick Co., May 30, 1 ♂; Swan Creek, Anne Arundel Co., June 19, 4 ♂, 3 ♀; East Neck Island, Kent Co., Sept. 18, 1 ♂, 1 ♀; Miles River, Talbot Co., Aug. 25, 1 ♂. [See Hagen 1861, Banks 1892, Root 1923.]

84. E. ASPERSUM (Hagen). Woodbrook, Baltimore Co., June 24-July 5, 2 ♂; Notch Cliff, Baltimore Co., June 22, 1 ♂. [See Root 1923.]

85. E. TRAVIATUM Selys. Waterford Mill, Old Annapolis Rd., Anne Arundel Co., June 10, 1 ♂. [See Root 1923.]

86. ISCHNURA RAMBURII Selys. Swan Creek, Anne Arundel Co., June 19, 4 ♂, 1 ♀; Marley's Creek, Anne Arundel Co., June 19, 4 ♂; Galesville, Anne Arundel Co., May 27, 1 ♂. Governor's Run, Calvert Co., May 27, common; East Neck Island, Kent Co., May 28-Aug. 15, very common; Vienna, Dorchester Co., Aug. 25, 4 ♂, 1 ♀; Miles River, Talbot Co., Aug. 25, 2 ♂. [See Hagen 1861, Selys 1876, Banks, 1892, Root 1923.]

Both heterochromatic and homochromatic females were mating on May 27th.

87. I. POSITA (Hagen). Very common about sluggish streams, or ponds and lakes, April 24-August 25. [See Calvert 1903, Ris 1903, Root 1923.]

One of our commonest species.

88. I. VERTICALIS (Say). This species occurs practically everywhere about water, May 4-August. [See Selys 1876, Calvert 1903, Root 1923.]

89. ANOMALAGRION HASTATUM (Say). Bush River, Harford Co., May 21, 5 ♂ ; Winter's Run, Harford Co., June 3, 1 ♂ ; Rockland, Baltimore Co., July 6, 5 ♂ ; Govans, Baltimore City, April 24, 1 ♀ ; (seen Frederick, Frederick Co., May 30, 1 ♂) ; Lakeshore, Anne Arundel Co., Sept 22, 1 ♂ , (many seen) ; East Neck Island, Kent Co., July, 1 ♂ , 1 ♀ ; Vienna, Dorchester Co., Aug. 25, 3 ♀ . [See Selys 1876, Banks 1892, Ris 1903.]

Megasoma elephas Fab. in Pennsylvania (Coleop.: Scarabaeidae).

By MARK ROBINSON & JOHN W. CADBURY, 3rd
Philadelphia, Pa.

On January 12, 1940, Mr. John Dalrymple, of Philadelphia, brought to the Academy of Natural Sciences, a fine male of this giant beetle for identification. Many strange and unusual tropical insects are brought in for this purpose from time to time, but they are, so to speak legitimate, having been collected in their native haunts and sent in to collectors. But here was another story. The beetle was taken alive, according to Mr. Dalrymple, clinging to a piece of rope in a truck loaded with bananas and other tropical fruit at Huntingdon and American Streets, Philadelphia. The truck was being unloaded on to a freight car when the specimen was discovered.

We were, to put it mildly, a trifle skeptical at first, but it appears that the specimen had lived two days in captivity, and had only just died. Upon examining the specimen it was

found to be still in a partially relaxed condition and also to weigh considerably more than dried examples in the studied collection. It weighs, in fact, 1¼ ounces and measures 110 mm. in length, of which the frontal bifurcated horn alone is 30 mm. The width at its greatest point is 46 mm.

For the benefit of those unfamiliar with this huge insect, it is a member of the subfamily Dynastinae, is black, with the dorsal surface sericeous, anteriorly ferruginous, shading to fulvous on the elytra. At the base of the long frontal horn on the head, is a smaller, down-curved process, and on each side of the pronotum is a short, nearly straight, acute horn. The striae on the elytra are extremely fine. The anterior tibia is incurved, armed with three teeth, and between the strong, large, curved tarsal claws is a prominent pencillate pulvillus, tipped with a few short hairs.

Normally *M. elephas* occurs in Guatemala, Costa Rica, Panama and Nicaragua where it frequents mangoes, especially when these trees are in fruit. It is notably a strong flyer and it has been said that when hit while driving it can break the windshield of a car. The exceedingly heavy chitinous exoskeleton, together with the large bulk of the beetle, would seem to make such reports plausible.

So far as the writers know this is the only instance on record of the occurence of the species in continental United States. How it got to Philadelphia will always be a matter for conjecture, but it was undoubtedly imported with a cargo of fruit from a Central American port. Mr. Dalrymple generously deposited the specimen in the collection of the Academy.

OBITUARY

A letter from his daughter brings the sad news that KENNETH J. MORTON died at his home in Edinburgh, Scotland, on January 29, 1940, in his eighty-second year. Since 1882 down to the January which saw his death, he had published on Trichoptera, Plecoptera, Neuroptera and Odonata.—P. P. C.

A List of the Dragonflies (Odonata) Taken in the Region of Muscongus Bay, Maine.

By Donald J. Borror, Department of Zoology and Entomology, Ohio State University.

(Continued from page 47.)

List of Species.[1]

1. Agrion aequabile (Say). (23), 5 ♂ July 3, 1939. A couple of males will "dance" around each other in the middle of the stream, a foot or two above the water, for several minutes at a time.

2. A. maculatum Beauvais. Common at (28), June 21 to Aug. 24; (9), 1 ♂ June 18, 1839; (23), 5 ♂ July 3, 1939.

3. Lestes congener Hagen. (29), 3 ♂ and 3 ♀ Aug. 14, 1939. These were ovipositing, in tandem, on *Juncus* sp. about a foot above the water.

4. L. disjunctus Selys. Common along marshy lake shores. Taken at (2, 3, 7, 19, 22, 24, and 29), July 6 to Aug. 28.

5. L. eurinus Say. (29), 5 ♂ July 5, and 4 ♂ July 6, 1939. This is a new record for Maine.

6. L. forcipatus Rambur. (2), 1 ♂ July 2, 1939.

7. L. inaequalis Walsh. (8), 1 ♂ July 8, 1939; (29), 1 ♂ July 5, 3 ♂ July 6 and 1 ♂ July 20, 1939.

8. L. rectangularis Say. (6), 2 ♂ Aug. 24, 1939; (19) 2 ♂ and 3 ♀ Aug. 5, 1938; (25), 3 ♂ Aug. 23, 1938; (29), 1 ♂ and 1 ♀ July 6, 1939.

9. L. uncatus Kirby. Fairly common at (17), June 21 to July 22; (29), 1 ♀ June 30, 1938.

10. L. unguiculatus Hagen. Common in swamps and along marshy shores. Taken at (11, 16, 17 and 29), June 21 to Aug. 29. Very abundant at (17), where several could be taken with a single sweep of the net during most of the summer.

11. L. vigilax Hagen. Fairly common along marshy lake shores. Taken at (3, 5, 9, 10, 13, and 29), June 17 to Aug. 16.

12. Argia moesta (Hagen). (24), 1 ♂ July 5, 1939, on road.

[1] Numbers in parentheses refer to localities, as numbered in the list above.

13. A. VIOLACEA (Hagen). Common along pond shores and occasional in swamps and along streams. Taken at (2, 6, 7, 10, 14, 24, 25, 28, and 29), June 12 to Aug. 26.

14. NEHALENNIA IRENE (Hagen) Abundant in swamps and along marshy lake shores. Taken at (2, 5, 11, 13, 14, 17, 18, 20, 21, 22, 24, 25, 27, 28, and 29), June 19 to Aug. 22.

15. CHROMAGRION CONDITUM (Hagen). (8), 1 ♂ and 1 ♀ July 8, 1939; (18), 3 ♂ July 9, 1938; (29), 1 ♂ June 22, 1939.

16. ENALLAGMA ASPERSUM (Hagen). (6), 1 ♂ Aug. 24, 1939, along road near pond; (17), 1 ♂ Aug. 9, 1938, and 1 ♂ July 22, 1939.

17. E. BOREALE Selys. Fairly common in swamps and along marshy lake shores. Taken at (13, 14, 17, 21, 24, and 29), June 9 to July 22.

18. E. CIVILE (Hagen). Common along pond shores. Taken at (2, 17, 19, 20, 22, 24, 25, 27, and 29), June 28 to Aug. 26.

19. E. EXSULANS (Hagen). (20), 6 ♂ and 3 ♀ July 19, 1939.

20. E. HAGENI (Walsh). Very common and abundant at ponds and swamps; occasional along streams. Taken at (2, 5, 8, 9, 10, 13, 14, 15, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, and 29), June 9 to Aug. 16.

21. E. LATERALE Morse. (20), 1 ♂ July 19, 1939, taken while sweeping bulrushes along shore of pond. This is a new record for Maine.

22. E. MINUSCULUM Morse. Common in 1938, abundant in 1939, at ponds. Taken at (7, 14, 20, 24, 25, 27, and 29), June 12 to Aug. 16. In the two seasons 142 ♂ and 26 ♀ were collected.

23. E. VESPERUM Calvert. (24), 2 ♂ June 21, 1939; (27), 1 ♂ and 1 ♀ July 19, 1939; (29), seen June 30, 1938.

24. COENAGRION RESOLUTUM (Hagen). (21), 2 ♂ June 28, 1939. This is a new record for New England.

25. ISCHNURA POSITA (Hagen). (9), 1 ♂ July 16, 1939.

26. I. VERTICALIS (Say). The most common damselfly of the region. Taken at (1, 2, 5, 7, 8, 9, 10, 11, 13, 14, 15, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 29), June 9 to Aug. 28.

27. ANOMALAGRION HASTATUM (Say). (17), 2 ♂ Aug. 9 and 1 ♂ Aug. 22, 1938.

28. HAGENIUS BREVISTYLUS Selys. (11), 1 ♀ Aug. 11, 1939 (by Clare Zufeldt); (24), 1 exuvium June 14, 1938.

29. GOMPHUS EXILIS Selys. Common along lake shores. Taken or observed at (13, 14, 20, 23, 24, 25, and 29), June 9 to Aug. 26.

30. DROMOGOMPHUS SPINOSUS Selys. (20), 1 ♂, July 19, 1939 (by Robert B. Wait).

31. GOMPHAESCHNA FURCILLATA (Say). (25, bog), 3 ♂ June 12, 1938, and 1 ♂ June 15, 1939.

32. BASIAESCHNA JANATA (Say). (2), 2 ♂ July 2, 1939; (24), 1 ♀ June 12, 1938, 1 ♀ June 15, 1939; (29), 1 ♀ July 3, 1939.

33. BOYERIA VINOSA (Say). (28), 2 ♂ Aug 23, 1938 (by May Stewart), and 7 ♂ Aug. 14, 1939 (by Clare Zufeldt). Seen at (28) Aug. 24, 1939. This species flies in a zig-zag flight a few inches above the surface of the stream. Nymphs were found throughout the summer at (28), under stones in the brook.

34. ANAX JUNIUS (Drury). Fairly common and wide-ranging. Taken or observed at (2, 3, 7, 9, 10, 14, 16, 17, 19, 20, and 29), June 18 to Aug. 22.

35. AESHNA CANADENSIS Walker. (7), 1 ♂ Aug. 16, 1939; (17), 1 ♂ Aug. 15, 1939; (24), 1 ♂ Aug. 26, 1939; (29), 1 ♀, Aug. 14 and 2 ♂ Aug. 23, 1939 (by Frank Jackson).

36. AE. CLEPSYDRA Say. (2), 3 ♂ Aug. 16, 1938; (29), 1 ♀ Aug. 16, 1938, 1 ♂ Aug. 23, 1939, and seen Aug. 28, 1939; 1 ♀ on radiator of writer's car, Aug. 10, 1939, taken between Damariscotta and Muscongus Bay, in Lincoln Co.

37. AE. CONSTRICTA Say. (11), 1 ♂ Aug. 8, 1939; (17) 2 ♂ Aug. 9 and 2 ♂ and 2 ♀ Aug 22, 1938; (24), 1 ♂ Aug. 23, 1938.

38. AE. TUBERCULIFERA Walker. (29), 1 ♀ Aug. 24, 1939 (by Robert Altman).

39. AE. UMBROSA Walker. (19), 1 ♀ Aug. 5, 1938. This individual was flying slowly over a bushy ditch, about a foot above the water, hovering or moving slowly as though looking for a place to oviposit.

40. AE. VERTICALIS Hagen. (2), 1 ♂ July 2, 1939; (11), 1 ♂ Aug. 15, 1939; (17), 1 ♂ July 6, 1938, 2 ♂ Aug. 15, 1939, and seen Aug. 29, 1939; (29), 1 ♀ Aug. 7, 1939 (by Clare Zufeldt).

41. CORDULEGASTER DIASTATOPS Selys. 1 ♀ on radiator of auto at (12), June 22, 1938. It is likely that the specimen was obtained somewhere in Lincoln Co. during the preceding week.

42. C. MACULATUS Selys. (28), 2 ♂ and 1 ♀ June 22, 1939; seen at this locality on June 21 and July 5, 1939.

43. DIDYMOPS TRANSVERSA (Say). (23), seen July 3, 1939; (25), 1 ♂ June 15, 1939, along road; (29), 1 ♂ July 15, 1938, along road.

44. TETRAGONEURIA CYNOSURA SIMULANS Muttkowski Fairly common along lake shores, and often flying some distance from water over roads and fields. Taken or observed at (2, 11, 14, 15, 24, 25, and 29), June 15 to July 5.

45. T. SPINIGERA (Selys). (25), 1 ♂ and 1 ♀ June 15, 1939, in clearing in bog, and 1 ♀ June 21, 1939, along road.

46. HELOCORDULIA UHLERI (Selys). (14), 1 ♂ June 22, 1939; (28), 1 ♂ June 21 and 4 ♂ June 22, 1939. The nymphs apparently do considerable migrating before transforming, as an exuvium was found at (4) July 22, 1938, under the eaves of a cottage about 15 yards from the shore of the lake.

47. SOMATOCHLORA FORCIPATA (Scudder). (11), 2 ♂ and 1 ♀ Aug. 11, 1939, in an alder swamp (1 ♂ by Clare Zufeldt and 1 ♀ by Martha Pelikan).

48. S. KENNEDYI Walker. (25), 7 ♂ June 12 and 1 ♀ June 14, 1938, 6 ♂ June 15, 1939, 1 ♂ June 21, 1939, seen July 5, 1939; (29), 1 ♀ July 3, 1939, along road. At (25) most of the specimens were taken in an alder-sphagnum bog; 1 ♂ was taken along a road bordering the bog. The ♀ oviposits in water among grasses much like a gomphine or libelluline.

49. DOROCORDULIA LEPIDA (Hagen). (10), 2 ♂ July 3, 1939; (25), 1 ♂ July 7, 1939; (26), 3 ♂ July 8, 1939; (29), 1 ♀ Aug. 14, 1939 (by Clare Zufeldt).

50. D. LIBERA (Selys). (5), 1 ♂ July 8, 1939; (8), 1 ♂ July 8, 1939; (17), 1 ♂ June 21, 1938; (29), 1 ♂ July 3, 1939. In both this species and the preceding the eyes are a brilliant green in life.

51. NANNOTHEMIS BELLA (Uhler). (29), 1 ♀ June 17, 1938, along road.

52. CELITHEMIS ELISA Hagen. Fairly common at ponds. Taken or observed at (2, 12, 13, 14, 24, and 29), June 17 to Aug. 26.

53. C. MARTHA Williamson. At ponds, but less common than *elisa*. (14), 2 ♂ Aug. 10, 1939, seen Aug. 26, 1939; (24), 1 ♂ and 3 ♀ Aug. 26, 1939; (29), 1 ♂ July 5, 1939 (by Helen B. Knapp), seen July 18 and Aug. 7, 1939.

54. LADONA EXUSTA (Say). Fairly common at ponds or over roads near ponds. Taken or observed at (1, 24, 25, and 29), June 12 to July 17.

55. L. JULIA (Uhler). (13), seen June 28, 1939; (21), seen June 28 and 29, 1939; (29), 3 ♂ June 22, and 2 ♂ July 6, 1939. This species and the preceding are fast fliers and often difficult to catch.

56. LIBELLULA INCESTA Hagen. (2), 1 ♂ Aug. 16, 1938.

57. L. LUCTUOSA Burmeister. (19), 1 ♀ Aug. 5, 1938. This is a new record for Maine.

58. L. PULCHELLA Drury. A common species. Taken or observed at (3, 5, 7, 8, 9, 10, 11, 16, 17, 19, 20, 22, 25, 26, and 29), June 21 to Aug. 24.

59. L. QUADRIMACULATA Linnaeus. Common at ponds and swamps. Taken or observed at (5, 9, 10, 11, 13, 17, 21, 25, and 29), June 12 to July 22.

60. PLATHEMIS LYDIA (Drury). At ponds, but not common. Taken or observed at (24) and (29), June 22 to Aug. 4.

61. SYMPETRUM COSTIFERUM (Hagen). Rare in 1938, fairly common in 1939. Taken at (3, 7, 22, and 29), Aug. 7 to 28.

62. S. DECISUM (Hagen). Common and abundant, the commonest species of the genus in this region. Taken at (2, 6, 7, 11, 12, 16, 17, 19, 22, 25, and 29), June 29 to Aug. 29. Although *decisum* Hagen has never been recorded from Maine, it is likely that most of the records of *rubicundulum* Say from Maine are this species.

63. S. OBTRUSUM (Hagen). (16), 3 ♂ Aug. 20, 1938; (17), 2 ♂ Aug. 9, 1938, and 1 ♂ Aug. 29, 1939; (29), seen (collected by a student) Aug. 28, 1939.

64. S. VICINUM (Hagen). (16), 1 ♀ Aug. 19, 1938 (by Robert Livingston); (17), 2 ♂ Aug. 15, 1939; (19), 3 ♂ Aug. 5, 1938.

65. LEUCORRHINIA FRIGIDA Hagen. (17), 22 ♂ and 2 ♀ June 28 and 9 ♂ and 1 ♀ July 22, 1939; (27), 6 ♂ July 19, 1939; (29), 1 ♂, July 3 and 1 ♂ July 18, 1939. This species flies low, in a very erratic fashion, through marsh grasses and rushes.

66. L. GLACIALIS Hagen. (17), 1 ♂ July 22, 1939. In the field, this species may be distinguished from other species in the genus by the large size, the large amount of red on the thorax and base of the abdomen, and the reddish stigma.

67. L. HUDSONICA (Selys). (11), 1 ♂ June 17, 1939, in clearing in woods; (17), 8 ♂ and 1 ♀ June 21, 1938, and 1 ♂ June 28, 1939; (24), 2 ♂ July 6, 1939 (by Donald Cooper); (25), 3 ♂ July 12 and 2 ♂ July 17, 1939, along road near swamp.

68. L. INTACTA (Hagen). Fairly common along marshy shores and in swamps. Taken or observed at (5, 8, 9, 10, 11, 13, 17, 21, 24, 26, 27, and 29), June 18 to July 19.

69. L. PROXIMA Calvert. Rare in 1938, fairly common in 1939. Taken at (10, 17, 21, 24, 25, and 29), June 28 to Aug. 14.

70. PANTALA FLAVESCENS (Fabricius). (11), 1 ♂ July 17, 1939 (by Frank Jackson); (16), seen Aug. 27, 1939; (20), seen July 19, 1939.

New or Little-Known Neotropical Polistes (Hymenoptera, Vespidae).

By J. BEQUAERT, Museum of Comparative Zoology, Cambridge, Massachusetts.

1. POLISTES MAJOR var. (or subsp.) **weyrauchi,** new.

♀ and *Worker.*—Head reddish chestnut-brown. Thorax reddish chestnut-brown over most of pronotum, mesonotum, scutellum and a spot in upper part of mesopleura; remainder black, the postscutellum blotched with russet. Abdomen mostly reddish chestnut-brown; basal two-thirds of first tergite, base of second tergite, and most of first to third sternites, black. Legs chestnut-brown; coxae and most of femora black; mid and hind tarsi orange. Antennae reddish-brown; basal two-thirds of flagellum blackish. Wings strongly purplish-black; stigma russet.

♂.—Very similar to the female.

Holotype and *paratype,* females from one nest, Valle Chanchamayo, PERU, 800 m. (W. Weyrauch). *Allotype,* male, Mt. San Lorenzo, Santa Marta, 5,500 ft., COLOMBIA (G. Salt). Paratypes: Cerro Quemado, San Lorenzo Mt., COLOMBIA,

one male (H. L. Viereck); Bonda, River Manzanares, 7 miles east of Santa Marta, COLOMBIA, nine females and one male (Herbert H. Smith).—Holotype, allotype and paratypes at Museum of Comparative Zoölogy, Cambridge, Mass.; paratypes also at Carnegie Mus., Pittsburgh, at Academy of Natural Sciences, Philadelphia, and at U. S. Nat. Museum.

Structurally and in size like typical *P. major* Palisot de Beauvois, as characterized in Ent. News, XLVII, 1936, p. 8. There is a mere trace of prepectal suture in the two females from Peru and in one of the males from Colombia. In the other specimens from Colombia, however, the suture is well-marked.

This new form is nearest to *P. major* var. *castaneicolor* J. Bequaert, to which I had originally referred two of the males from Colombia (Ent. News, XLVII, 1936, p. 13). The discovery by Dr. Weyrauch of additional specimens and of the nest, makes it advisable to distinguish the South American form by name. It is homeochromic with certain specimens of the typical form of *P. canadensis*, with which I confused the Peruvian females until Dr. Weyrauch pointed out to me (*in litt.*) that nest and larvae were different.

The var. *castaneicolor* is restricted to Mexico, southern Arizona and southern New Mexico.

2. POLISTES MAJOR var. (or subsp.) **colombianus,** new.

♀ (or *Worker*)—Body almost entirely chrome-yellow, with only the following parts cinnamon-brown: antennae (strongly infuscate above over most of flagellum); mandibles; a transverse stripe on vertex, in the ocellar region; a median line on mesonotum, widened anteriorly and posteriorly; tegulae; sternum; most of sutures of thorax (that between mesonotum and scutellum broadly blackish); legs, except for large yellow spots on coxae and on tips of femora; and broad bases of first and second abdominal segments. Wings as in typical form.

Holotype female, Valparaiso, Dept. Magdalena, 2,500 ft., COLOMBIA. Mus. Comp Zoöl., Cambridge, Mass.

In structure and size like typical *P. major,* scarcely with a trace of the prepectal suture. It is the most xanthic variant of the species, homeochromic with *Polistes carnifex* var. *boli-*

viensis J. Bequaert, which occurs in the same general region.[1]

3. POLISTES VERSICOLOR var. (or subsp.) **xanthogaster,** new.

♀ and *Worker.*—Head yellow; vertex, occiput, frons to near base of antennae (entering ocular sinuses), spots between antennae and clypeus, black; most of outer orbits ferruginous; antennae ferruginous; middle portion of flagellum black. Thorax black; most of pronotum and scutellum ferruginous; anterior and posterior margins of pronotum, tegulae, most of postscutellum, two short stripes on propodeum, articular valvulae, and a spot on upper part of mesopleura, yellow (sometimes slightly orange). Coxae black; femora black basally, ferruginous medially and yellow at tips; tibiae and tarsi ferruginous, hind tarsi somewhat yellowish. Abdomen mostly yellow; only the bases of the segments black, turning ferruginous toward the yellow areas, which are slightly notched by ferruginous on the second and third tergites, more broadly so on the first tergite. Wings as in typical form.

♂.—Similar to the female; but one specimen has two ferruginous lines on the mesonotum and ferruginous (instead of yellow) stripes on propodeum, while the other lacks all trace of yellow stripes on the propodeum.

Holotype female, *allotype* male and two *paratypes* (male and female), Cochabamba, BOLIVIA (R. G. Harris). Mus. Comp. Zoöl., Cambridge, Mass.

In my key to the varieties of *P. versicolor* (1934, Rev. de Entomologia, IV, pp. 148-149), this will run out to var. *peruvianus;* but it is readily separated from that and other forms by the broad apical yellow bands of most of the tergites and sternites.

4. POLISTES VERSICOLOR var. (or subsp.) **willei,** new.

♂.—Head mostly yellow; upper half of frons, vertex, occiput and hind half of outer orbits black; antennae ferruginous, slightly orange basally, the scape with a blackish spot above. Thorax black, with most of the dorsal area of the pronotum, tegulae, most of scutellum, two small dots on postscutellum, and small spots on the mesosternum, yellow. Legs

[1] I have seen many specimens of *P. carnifex* var. *boliviensis* from Colombia: Muzo, Dept. Boyacá; Porcecito, Rio Porce, Dept. Antioquia; Cacaguelito near Sa. Marta, Dept. Magdalena. These have generally a median longitudinal cinnamon-brown stripe over the yellow mesonotum.

black; small spots on under side of fore and mid coxae, narrow tips of femora, a line on underside of fore and mid femora and most of fore tibiae, yellow; tarsi ferruginous. Abdomen: first tergite black, with a broad apical yellow margin, divided medially by a brownish line; second tergite yellow, with a narrow black base protruding behind triangularly in the middle and more broadly on the sides; remaining tergites yellow; first sternite black; second and third sternites black, with broad yellow apical margins (bearing a blackish spot on each side); remaining sternites yellow. Wings as in typical form.

Holotype male, Cuczo, PERU (G. N. Wolcott). Mus. Comp. Zoöl., Cambridge, Mass.[2]

This wasp is strikingly different from all other Neotropical *Polistes* in the contrast between the almost entirely yellow abdomen and the mostly black thorax. I am unable to find structural characters to differentiate it from the males of the other color forms of *P. versicolor*.

5. POLISTES CANADENSIS var. (or subsp.) **satanulus,** new ♀ (or *Worker*).—Entirely shiny coal-black, except for the flagellum which is mostly ferruginous, darker above. Wings subhyaline, slightly suffused with ferruginous, somewhat darker anteriorly; veins of basal two-thirds and stigma brownish-black, those of apical third pale ferruginous.

Holotype female, Joinville, State of Sa Catharina, BRAZIL (F. Schade). Mus. Comp. Zoöl., Cambridge, Mass.

Perfectly homeochromic with *Polistes melanosoma* de Saussure, *Polistes deceptor* Schulz, and *Gymnopolybia angulata* (Fabricius). It was probably confused thus far with *P. melanosoma,* which no doubt occurs in the same territory. Specimens of *G. angulata* were taken by Mr. Schade at Joinville the same day as the type of *satanulus.*

The var. *satanulus* is the only color form of *P. canadensis* in which the legs are entirely black (including the hind tarsi).

6. POLISTES PARAGUAYENSIS Bertoni.

Polistes consobrinus (?) A. de Winkelried Bertoni, 1918, Anal. Cientif. Paraguayos, (2), No. 3, p. 227 (♀ ♂; Puerto

[2] This interesting wasp was received from Dr. J. E. Wille, of the Estacion Experimental Agricola de la Molina, near Lima, Peru. I wish to thank Dr. Wille for permission to deposit the type at the Museum of Comparative Zoölogy.

Bertoni, Paraguay and Ihgatimi, Matto Grosso, Brazil). Not of H. de Saussure, 1858.

Polistes paraguayensis A. de Winkelried Bertoni, 1921, Rev. Soc. Cientif. Paraguay, I, pt. 1, p. 12 (based on his supposed *Polistes consobrinus* of 1918).

P. consobrinus de Saussure is now recognized as a melanic variant of *P. versicolor* (Olivier). A. de Winkelried Bertoni pointed out that his supposed *consobrinus*, which he fully described in 1918, was structurally different from *P. versicolor*. I have one female and one male from Bolivia which agree well with Bertoni's account. They are of about the size and color of *P. versicolor* var. *consobrinus;* but in the male the clypeus is very broadly separated from the inner orbits, while it touches over a short distance in the female. There is a curious superficial resemblance between these specimens and some *fuscatus* var. *nestor*, of North America. The structure of the clypeus, however, separates *paraguayensis* from *fuscatus;* while, in the male, there is no median tubercle on the depressed area of the last sternite. Owing to the absence of prepectal suture and the presence of a complete median mesepisternal groove, *P. paraguayensis* belongs in the group of *P. canadensis*.

Undescribed Species of Crane-Flies from the Eastern United States and Canada (Dipt.: Tipulidae). Part VI

By CHARLES P. ALEXANDER, Massachusetts State College, Amherst, Massachusetts.

The crane-flies discussed at this time were derived from various sources that are acknowledged in connection with each species. The preceding part under this general title was published in ENTOMOLOGICAL NEWS, vol. 40: 44-49; 1929.

Tipula (Oreomyza) broweri n. sp.

Belongs to the *marmorata* group; allied to *nebulipennis;* femora obscure yellow, the tips blackened, preceded by a subequal clearer yellow ring; wings subhyaline, conspicuously clouded with brown or grayish brown; cell *C* clear, cell *Sc*

only a trifle darkened; abdomen chiefly yellow, the outer segments, including the hypopygium, more variegated with brown; male hypopygium with a rectangular blackened lobe at base of outer dististyle; gonapophyses conspicuous, jutting from the genital chamber, the outer pair narrowed at apex; eighth sternite with a deep median incision, forming two conspicuous yellow lobes that are fringed along their mesal margins with long coarse setae.

♂. Length about 10-12 mm.; wing 11.5-13 mm.

♀. Length about 12-13 mm.; wing 11-12 mm.

Frontal prolongation of head gray; palpi brownish black. Antennae with scape obscure yellow, pedicel orange, flagellum uniformly black; flagellar segments only moderately incised. Head dark gray.

Mesonotal praescutum dark gray with four dark brown stripes, the cephalic ends of the intermediate pair paler, posterior sclerites of notum gray, the scutal lobes weakly darkened. Pleura light gray, variegated with darker gray, especially on anepisternum, ventral sternopleurite and ventral meron. Halteres yellow, the knobs dark brown basally, their apices paling to reddish brown.

Legs with the coxae gray; trochanters yellow; femora obscure yellow, the tips conspicuously blackened, preceded by a subequal clear yellow ring; tibiae and basitarsi brownish yellow, the tips darkened; remainder of tarsi black, claws (♂) with a single basal spine.

Wings subhyaline, clouded with paler brown or grayish brown, the pattern arranged much as in *fragilis* and unusually contrasting for a member of this group of flies; cell *C* clear, cell *Sc* only a trifle darkened; stigma darker brown; veins brown. Venation: *Rs* approximately one-half longer than *m-cu*.

Abdomen chiefly yellow, the first tergite and remainder of pleural region darkened; beyond midlength of abdomen both tergites and sternites more darkened laterally; hypopygium chiefly dark brown, the conspicuous lobes of the eighth sternite and the dististyles extensively yellow. Male hypopygium with the lateral lobes of tergite terminating in short decurved points, the margin of the median notch with microscopic blackened points. Basistyle on mesal edge below insertion of dististyles with a blackened plate or flange. Outer dististyle with a rectangular blackened lobe or flange at base. Inner dististyle relatively narrow, the apex of beak microscopically bidentate.

Gonapophyses conspicuously projecting from genital chamber, the inner pair narrow, tapering to a slender apex, the surface with delicate pale setulae; outer apophyses broad but tapering gradually to a narrow obtuse lobe. Eighth sternite with a deep median incision, forming two conspicuous yellow lobes, their mesal margins with abundant long coarse setae.

Habitat.—MAINE. *Holotype*: ♂, Mount Katahdin, summit, altitude 5,200 feet, September 2, 1939 (A. E. Brower). *Allotopotype*, ♀, with the type. *Paratopotypes*, 11 ♂♂, 1 ♀, altitude 4800-5,200 feet, September 2-3, 1939 (A. E. Brower).

Tipula (*Oreomyza*) *browcri* is named in honor of the collector, my good friend, Dr. A. E. Brower, who has added vastly to our knowledge of the insects of Maine. The species is most similar to *T.* (*O.*) *nebulipennis* Alexander, of Labrador, Gaspé, and the alpine summits of Mount Washington, New Hampshire, yet is entirely distinct from this, as well as all other members of the group. As common in the Tipulidae, the details of structure of the male hypopygium furnish the most evident specific characters, especially the structure of the dististyles, gonapophyses and the eighth sternite. Dr. Brower found this species in various places between Baxter Spring and the summit, associated with another member of the same group, *Tipula* (*Oreomyza*) *insignifica* Alexander, which is an autumnal species known elsewhere only from the alpine summits of the Presidential Range, New Hampshire (Lakes of the Clouds; Alpine Garden; Madison Springs; Star Lake).

The type of *browcri* is preserved in my personal collection of these flies.

(To be continued.)

The Charles Robertson Collection of Insects.

Science for March 1, 1940, announces that the Illinois Natural History Survey has purchased this collection from Charles V. Robertson, the son. It consists of more than 30,000 pinned specimens, about two-thirds of which are bees and wasps, and about 200 type specimens, gathered in connection with Prof. Robertson's study of insect pollination. He died June 17, 1935; a brief obituary notice appeared in the NEWS for October, 1936, page 228.

Current Entomological Literature

COMPILED BY V. S. L. PATE, L. S. MACKEY and E. G. FISHER.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. All continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

Note. References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the list of Periodicals and Serials published in our January and June issues. This list may be secured from the publisher of Entomological News for 10c. The number of, or annual volume, and in some cases the part, heft, &c., the latter within ( )follows; then the pagination follows the colon :

Papers published in the Entomological News are not listed.

GENERAL.—Anon.—Crystal-clear Plastics. [The Institute News] 4: 4, ill. **Bondar, G.**—Insetos daninhos e parasitas do cacau na Bahia. [Inst. Cacau Bahia] Bol. Tec. No. 5: 112 pp., ill. **Crossland, C.**—Rules of Zoological Nomenclature. [31] 144: 942. **Fortunato, F.**—An aid in spreading paraffin sections. [Pro. Penna. Acad. Sci.] 13: 21. **Imms, A. D.**—Air transport, insects and disease. [31] 145: 76. **Martorell, L. F.**—Insects observed in the state of Aragua, Venezuela, South America. [Jour. Agric. Univ. of Puerto Rico] 23: 177-232. **Martorell & Salas.**—Additional insect records from Venezuela. [Jour. Agric. Univ. Puerto Rico] 23: 233-255. **Needham, P. R.**—Trout stream animals. Comstock Publishing Co. Ithaca. 1938. 73-112, ill. **Schackleford, M. W.**—New methods of reporting ecological collections of prairie arthropods. [Amer. Mid. Nat.] 22: 676-683, ill.

ANATOMY. PHYSIOLOGY, ETC.—Beadle, Tatum & Clancy.—Development of eye colors in Drosophila: Production of v^+ hormone by fat bodies. [92] 77: 407-414. **Becker, E.**—Uber die Natur des Augenpigments von Ephestia kuhniella und seinen Vergleich mitden Augenpigmenten anderer Insekten. [97] 59: 597-627, ill. **Bounhiol, J. J.**—Récentes recherches expérimentales sur les insectes les fonctions des corps Allates (Corpora allata). [Notes et Revue, Paris] 81: 54-64, ill. **Ch'eng-Pin, P.**—

Morphology and anatomy of the chinese scorpion Buthus martensi. [Peking Nat. Hist. Bull.] 14: 103-117, ill. **Child, G.**—The effect of increasing time of development at constant temperature on the wing size of vestigial of Drosophila melanogaster. [92] 77: 432-442, ill. **Clancy,** (see **Beadle, Tatum & Clancy). Cousin, G.**—Sur les principes de L'analyse biométrique d'une hybridation. [Arch. Zool. Exp. et Gen.] 81: 285-316, ill. **Ekblom, T.**—Étude des chromosomes du Gerris asper. [Notes et Revue, Paris] 81: 65-77, ill. **Ghidini, G. M.**—Studi sulle termiti: Sulla presenza di Acetilcolina in Reticulitermes lucifugus e Calotermes flavicollis. [Riv. Biol. Coloniale] 2: 207-213, ill. **Krause, G.**—Die eitypen der insekten. [97] 59: 495-536, ill. **Lison, L.**—Excretion intestinale et athrocytose discriminante chez Machilis maritima (Thysan.). [77] 132: 309-310. **Marcu, O.**—Nachtrag zu den vergleichenden untersuchungen an den stridulationsorganen der Cerambyciden. [Bull. de la Sec. Sci. Acad. Roumaine] 15, (1932): 240-245, ill. **Miller, J. A.**—(See under Diptera). **Rees & Ferris.**—(see under Diptera). **Tatum,** (see **Beadle, Tatum & Clancy). Weber, H.**—Beiträge zur kenntnis der ueberordnung Psocoidea. [97] 59: 397-409, ill. **Weber, H.**—Vergleichend-funktionsanatomische untersuchungen an atypischen beissmandibeln von insekten. [97] 59: 541-566, ill.

ARACHNIDA AND MYRIOPODA.—Biraben, M.—Sobre nidos de Arañas del género Thomisoides. [Notas del Museo, Buenos Aires] 4: 361-365, ill. (s). **Chamberlin, R. V.**—On a Diplopod Collection from Barro Colorado Island, Panama. [Bull. Univ. Utah] 30: 16 pp. (*). **Ch'eng-Pin, P.**—See under Anatomy. **Chickering, A. M.**—Anyphaenidae and Clubionidae of Michigan. [Pap. Mich. Acad. Sci. A & L.] 24: 49-84, ill. (k). **Herman, C. M.**—(See underNeuroptera). **Jellison, W. L.**—The burrowing owl as a host to the Argasid tick, Ornithodoros parkeri. [Suppl. Jour. Parasit.] 25: 17. **Keiffer, H. H.**—Eriophyid studies VII. [Bull. Dept. Agric. State Calif.] 28: 484-505, ill (*). **Krull, W. H.**—Observations on the distribution and ecology of the oribatid mites. [91] 29: 519-528. **Loomis, H. F.**—The millipeds collected in Appalachian caves by Mr. Kenneth Dearolf. [Bull. Mus. Comp. Zool.] 86: 165-193, ill. (*). **Philip, C. B.**—Ticks (Ornithodoros spp.) in Arizona Bat "Caves". [Suppl. Jour. Parasit.] 25: 15-16. **Severin, H. C.**—Some unexpected species of Arthropoda found in South Dakota. [Pro. So. Dak. Acad. Sci.] 19: 86-88. **Verhoeff,**

K. W.—Von Dr. G. H. Schwave in Chile gesammelte Isopoda terrestria, Diplopoda und Chilopoda. [52] 8: 301-324, ill. (k).

THE SMALLER ORDERS OF INSECTS.—Adamson, A. M.—A second report on the termites of Trinidad, British West Indies. [Trop. Agric.] 17: 12-15. **Davis, C.**—Taxonomic notes on the order Embioptera. [Pro. Linn. Soc. N. S. W.] 64: 181-190, ill. (*s). **Herman, C. M.**—Parasites obtained from animals in the Collection of the New York Zoological Park during 1938. [Zoologica, New York] 24: 481-485. **Hood, J. D.**—Un nuevo Polyphemothrips (Thysan). del Perú. [Bol. Mus. Hist. Nat. "Javier Prado"]. III: 58-62, ill. **Kohls, G. M.**—Siphonaptera: A study of the species infesting wild hares and rabbits of North America north of Mexico. [Suppl. Jour. Parasit.] 25: 17. **Ricker, W. E.**—Notes on specimens of American Plecoptera in European Collections. [Trans. Ry. Can. Inst.] 22: 129-156, ill. **Tillyard & Fraser.**—A reclassification of the order Odonata. Based on some new interpretations of the venation of the dragonfly wing. [The Australian Zool.] 9: 195-221, ill. (*) **Tsuda, M.**—Ueber das vorkommen von Odonatennymphen, Pantala flavescens in Stark Salzhaltigem Wasser. [Annotat. Zool. Japonenses] 18: 133-136.

ORTHOPTERA.—Bragg, J. H.—The geographic distribution of Acrididae in northern Oklahoma. [Amer. Mid. Nat.] 22: 660-675, ill. **Cantrall, I. J.**—Notes on collecting and studying Orthoptera. [Ward's Ent. & Nat. Sci. Bull.] 13: 1-6, ill. **Cousin, G.**—(See under Anatomy). **Edwards, J. L.**—A bird-catching insect. [Abst. Proc. Linn. Soc. N. Y.] 1934: 44. **du Plessis, C.**—The influence of weather conditions on the incipient swarming of the brown locust, Locustana pardalina. [Dept. Agric. & For. Union So. Africa] Sci. Bull. 186: 51 pp., ill. **Rehn, J. A. G.**—The status and relationship of the neotropical genus Scyllinops (Acrididae). [104] 10: 115-123. **Severin, H. C.**—(See under Arachnida).

HEMIPTERA.—Caldwell, J. S.—Three new species of Psyllidae with notes on others. [43] 40: 49-50. (*). **de Carlo, J. A.**—Los Belostómidos Americanos. [An. Mus. Arg. Cien. Nat.] 39: 189-252, ill. (*). **Hoffmann, C. C.**—Nota acerca de la alimentacion de las larvas pequenas de Triatoma (Triatomidae). [An. Inst. Biol. Mex.] 10: 343-346. **Knowlton & Allen.**—Five Mucrotrichaphis aphids.

[43] 40: 31-35, ill. (*k). **Oman, P. W.**—Revision of the genus Ceratagallia (Cicadellid.). [91] 29: 529-543, ill. (*). **de la Torre-Bueno, J. R.**—A synopsis of the Hemiptera-Heteroptera of America north of Mexico. [70] 19: 141-310, ill. **Usinger, R. L.**—Fossil Lygaeidae from Florissant. [Jour. Paleon.] 14, (1): 79-80, ill. (*).

LEPIDOPTERA.—Gäbler, H.—Ueber das auftreten verschiedener-farbvarietäten der nonne (Lymantria monacha). [Forsch. und Fortsch.] 15: 386-387, ill. **Hayward, K. J.**—Hesperioidea Argentina X. [An. Soc. Cien. Argentina] 128: 289-296, ill. **Kellogg, D. K.**—Studies of Papilio cresphontes Cramer in southern Texas. [Univ. Colo. Studies] 26: 85-86. **dos Passos, C. F.**—The Satyridae. [Bull. Cheyenne Mountain Mus.] 1: 13 pp.

DIPTERA.—Cresson, E. T., Jr.—Descriptions of new genera and species of the dipterous family Ephydridae. Paper XII. [Notulae Naturae] No. 38: 10 pp. **Ferris,** see **Rees & Ferris). Frohne, W. C.**—Biology of certain subaquatic flies reared from emergent water plants. [Pap. Mich. Acad. Sci. A & L.] 24: 139-147. **Fulton, B. B.**—Lochetic luminous dipterous larvae. [Jour. E. Mitchell Sci. Soc.] 55: 289-293, ill. **Hardy, G. H.**—Miscellaneous notes on Australian Diptera V. On eye-coloration, and other notes. [Pro. Linn. Soc. N. S. W.] 64: 34-50. **Hinman & Hurlbut.**—A study of winter activities and hibernation of Anopheles quadrimaculatus in the Tennessee Valley. [Suppl. Jour. Parasit.] 25: 16. **Hoffmann, C. C.**—La formacion de razas de Anopheles Mexicanos. III. Anopheles chiriquiensis komp en el interior del estado de Chiapas. [An. Inst. Biol. Mex.] 10: 347-352, ill. **Miller, J. A.**—Studies in mosquito behavior. [Sci. Monthly] 1940: 172-175, ill. **Milne, L. J.**—Autecology of the golden-rod gall fly. [84] 21: 101-105, ill. **Rees & Ferris.**—The morphology of Tipula reesi (Tipulidae). [Microent.] 4: 143-176, ill. (*). **Simmons, S. W.**—The culture of fly larvae for use in maggot therapy. [Iowa State Coll. Jour. Sci.] 14: 81-83.

COLEOPTERA.—Benick, L.—Die Steninen Mittelamerikas (Staph.). [Mitt. Munchner Ent. Gesell.] 29: 617-642, ill. (*). **Blut, H.**—Beitrag zur verbreitung und systematik der gattung Dendropaemon. [52] 8: 263-300, ill. (s*). **Bruch, C.**—Coleópteros: Mirmecófilos y Termitófilo (Hist. Staph.). [An. Mus. Arg. Cien. Nat.] 39: 125-133, ill. (s*). **Chagnon, G.**—Contribution a l etude des Coleopteres de

la Province de Quebec. [98] 66: 229-238, ill. **Knull, J. N.**—A new Acmaeodera from the Southwest. (Buprestid.). [43] 40: 36. (*). **McQuerrey, J. E.**—The biology of Tenebrio molitor. [Univ. Colo. Studies] 26: 90. **Marcu, O.**—(See under Anatomy). **d'Orchymont, A.**—Les espèces du groups Chaetarthria pallida (Palpicornia). [Bull. Mus. Ry. Hist. Nat. Belgique] 15: 7 pp., ill. (*k). **Pic, M.**—Diagnoses de Coleopteres exotiques. [L'Echange Rev. Linnee., Moulins] 1939: 31-32. (*s).

HYMENOPTERA.—Cockerell, T. D. A.—The bees of the Southern California Islands. [61] 23: 427-436. (*). **Gemignani, E. V.**—Nueva nota sobre la familia Eucharidae (Chalcid.). [An. Mus. Arg. Cien. Nat.] 39: 159-166, ill. (s). **Hill & Pinckney.**—Keys to the parasites of the Hessian fly based on remains left in the host puparium. [U. S. Dept. Agric.] Tech. Bull. 715: 13 pp., ill. **Milliron, H. E.**—The taxonomy and distribution of Michigan Bombidae, with keys. [Pap. Mich. Acad. Sci. A. & L.] 24: 167-182. **Weber, H.**—(See under Anatomy).

SPECIAL NOTICES.—The generic names of British insects. Part 6. The generic names of the British Carabidae, with a check list of the British species. 1939. London. pp. 153-192. **The Indian Journal** of Entomology. Volume 1. Parts 1 & 2. June 1939. Published by The Entomological Society of India. 137 pp.

Notice of a Forth-Coming Checklist of North American Orthoptera.

A synonymic checklist of the Dermaptera and Orthoptera of America north of Mexico has been prepared by Morgan Hebard and myself. This list (the first since the catalogue published by Scudder in 1900) is now being revised as a preliminary to publication late this year or early in 1941. All persons having in manuscript records which constitute significant extensions of ranges, new synonymy, or descriptions of new species or races of North American Orthoptera or Dermaptera are urged to publish as soon as possible, in order that their information may be included in the checklist. It will facilitate the work of revising the list if the authors will send me reprints of their articles.—THEODORE H. HUBBELL, Department of Biology, University of Florida, Gainesville, Florida.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Wanted—*Megathymus streckeri* from S. W. Colo. or New Mex. Also from Texas. Also *M. yuccae* from Colo. Offer in exch. *Meg. leussleri* Holl. (Nebr. race *streckeri*). R. A. Leussler, 115 S. 52nd St., Omaha, Nebr.

Wanted—Cantharidae of the United States, esp. those of the genus Cantharis. Will exchange named beetles of Oregon. K. M. Fender, 930 S. Davis St., McMinnville, Oregon.

Desired—Ichneumonidae. Especially Tryphoninae of the world for revisionary work. Will exchange or purchase acceptable material. Andrew R. Park, Jr., c/o State Dept. of Public Health, 1800 Fillmore Street, Chicago, Illinois.

Lucanidæ of the world. Will determine, exchange or purchase. Desire especially neotropical material for revisional work. Bernard Benesh, Box 159, North Chicago, Ill.

60 Cocoons, carefully fed, of **Samia nokomis** for Comstock's California Butterflies and 40 for Holland's Butterflies, Vol. 2. Both either new or second, or will exchange **nokomis** cocoons for desirable butterflies, **Papilio, Argynnis or Megathymus.** Jack Dennis, Beulah, Manitoba, Canada.

Desired—Dolichopodidae of western United States and Canada. Will determine for privilege of retaining duplicates. F. C. Harmston, Entomology Dept., Utah Agric. College, Logan, Utah.

Wanted.—Chrysididae and Cleptidae of the world for cash or for exchange and determination, especially Nearctic and Neotropical material, for revisional purposes. W. G. Bodenstein, Dept. of Entomology, Cornell University, Ithaca, N. Y.

Wanted.—Nitidulidae for determination or exchange. Correspondence desired with those who will collect. H. R. Dodge, 78 Anne Street, Clintonville, Wisconsin.

Wanted.—To hear from specialists who would care to determine some family of insects for a share of the duplicates. We have many specimens, especially in some families of Diptera and Hymenoptera. H. E. Jaques, Iowa Insect Survey, Mt. Pleasant, Iowa.

Insects from Northern Korea.—I will collect insects for specialists in certain groups upon their request; very rich fauna; rates reasonable. Address: Mr. Alexander M. Yankovsky, Shuotsu-Ompo, Korea, Japan.

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We would call your attention to the increasing scarcity of many of the publications of The American Entomological Society, and advise you to obtain those desired before the publisher is unable to supply them, at least at the present prices. This refers to contributions published in the Proceedings of The Entomological Society of Philadelphia and in the Transactions of The American Entomological Society. We will be glad to give you prices on any available if you send us your desiderata, stating authors, volume and pagination. We also have a large number of entomological papers published in other journals, duplicated in the Society's library. In submitting your want list in this line, give order, author, journal, volume, pagination and date. Address:

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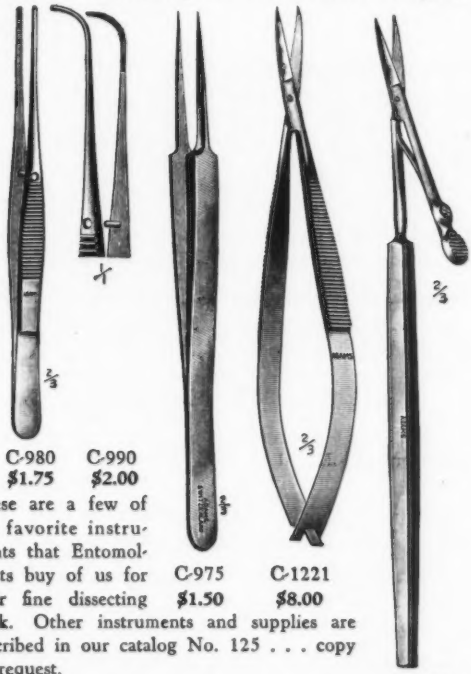

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